

(3 hours)

[Total Marks: 80]

NB :

- 1) Question No.1 is **compulsory**.
- 2) Attempt any **three** questions out of the remaining questions.
- 3) Make suitable assumptions wherever necessary.

Q.1 Solve Any four (5 Marks X 4)

- a) Compare parallel and distributed system models by giving example of each. 5
- b) State the goals of a distributed system. 5
- c) Compare and contrast between message oriented and stream oriented communication. 5
- d) Discuss Amdahl's law for measuring speed up performance of parallel system. 5
- e) Enlist and discuss desirable features of global scheduling algorithm 5

- Q.2 a) Illustrate 4 stage pipeline architecture. 10
- b) What is Remote Procedure Call. Discuss the working of RPC in detail. 10

- Q.3 a) Discuss the role consistency in distributed system. What is the need of client centric consistency models. Explain any two data centric consistency models. 10
- b) Illustrate the implementation details of pipelined floating point adder. 10

- Q.4 a) Discuss the need of process migration. Explain the role of resource to process and process to resource binding in process migration. 10
- b) Explain Raymond's Tree based algorithm of token based distributed mutual exclusion. 10

- Q.5 a) Describe code migration issues in detail. 10
- b) Explain the load balancing approach. Explain static and dynamic load balancing algorithm. 10

Q.6 Attempt any two (10X2) 20

- a) Pipeline hazards and techniques to eliminate those hazards
- b) Lamport algorithm
- c) Election Algorithm
- d) Andrew File System(AFS)
